

REMARKS/ARGUMENTS

In the Office Action of May 13, 2010, claims 1, 5-14, 18 and 20-26 were rejected. In response, claims 7, 18, 20 and 26 have been amended. Support for the amendments to claims 7, 18, 20 and 26 is found in Applicants' specification at, for example, Fig. 4 and page 5, lines 18-23. In addition, the paragraphs between page 2, line 27 and page 3, line 26 of the specification have been amended to remove the reference to claims 2-7. Support for amendment to the specification is found in the present Application at, for example, original claims 2-7. Applicants hereby request reconsideration of the application in view of the amendments and the below-provided remarks.

On April 30, 2010, a telephone conversation between the undersigned attorney and Examiner Joselito Sasis Baisa was conducted. In the telephone conversation, amendments to the claims and the specification were discussed. However, no agreement has been reached.

Information Disclosure Statement (IDS)

An information disclosure statement (IDS) for Shimanuki (U.S. Pat. No. 6,307,440), Chen et al. (U.S. Pat. No. 6,463,875), Ma et al. (U.S. Pat. Pub. No. 2002/0142512), Akira et al. (JP 08-046424A) and Hung et al. ("A Packaged 1.1-GHz CMOS VCO with Phase Noise of -126 dBc/Hz at a 600-kHz Offset," IEEE Journal of Solid-State Circuits, January 2000, pages 100-103, volume 35) has been filed on March 24, 2010 with the Request for Continued Examination (RCE). However, Applicants note that the Examiner has not confirmed that the references cited in the IDS have been considered. Applicants herein request that the Examiner properly confirms that the references cited in the IDS have been considered.

Amendments to the Specification

As described above, the paragraphs between page 2, line 27 and page 3, line 26 have been amended to remove the reference to claims 2-7. Support for amendment to the specification is found in the present Application at, for example, original claims 2-7.

Claim Rejections under 35 U.S.C. 103

Claims 1, 5-14, 18 and 20-26 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Knutson et al. (U.S. Pat. No. 4,035,695, hereinafter “Knutson”) in view of Takahira (U.S. Pat. No. 5,424,527). As described above, claims 7, 18, 20 and 26 have been amended. Applicants respectfully submit that the pending claims are not obvious over Knutson in view of Takahira for the reasons provided below.

Independent Claim 1

Claim 1 recites:

“Inductive-system comprising:
a first part in the form of a spiral printed coil comprising a number of turns defined by at least one track width and at least one turn spacing; and
a second part in the form of an air coil comprising a further number of turns defined by at least one wire diameter and at least one coil diameter,
wherein the printed coil and the air coil are coupled serially, wherein a total inductance of the inductive-system is substantially equal to an inductance of the printed coil plus an inductance of the air coil plus a mutual inductance that is determined based on a turning direction of said printed coil, a direction of winding of said air coil and a length of said air coil, and wherein the mutual inductance increases with the length of the air coil until a maximum overlapping area between the printed coil and the air coil has been reached.” (emphasis added)

Applicants respectfully assert that Knutson in view of Takahira does not teach that “*the mutual inductance increases with the length of the air coil until a maximum overlapping area between the printed coil and the air coil has been reached*” (emphasis added), as recited in claim 1. Because Knutson in view of Takahira does not teach all of the limitations of claim 1, Applicants respectfully assert that claim 1 is patentable over Knutson in view of Takahira.

The Office Action states that Knutson teaches the above-identified limitation of claim 1. (See pages 3 and 5 of the Office Action). Specifically, the Office Action suggests that combining the coil (46) of Fig. 2 of Knutson with the spiral conductor of Fig. 1 of Knutson through the first turn (26) and the second turn (28) would have resulted in an overlapping area between the spiral conductor of Fig. 1 and the coil (46) of Fig. 2. (See pages 3 and 5 of the Office Action).

However, Applicants respectfully assert that Knutson does not teach that “*the mutual inductance increases with the length of the air coil until a maximum overlapping*

area between the printed coil and the air coil has been reached” (emphasis added), as recited in claim 1. In fact, the Office Action does not even assert that the mutual inductance between the spiral conductor of Fig. 1 and the coil (46) of Fig. 2 “*increases with the length of the air coil until a maximum overlapping area between the printed coil and the air coil has been reached*” (emphasis added), as recited in claim 1. (See pages 3 and 5 of the Office Action).

Because Knutson in view of Takahira does not teach all of the limitations of claim 1, Applicants respectfully assert that claim 1 is patentable over Knutson in view of Takahira.

Dependent Claims 5-7 and 11-14

As described above, claim 7 has been amended. Claims 5-7 and 11-14 depend from and incorporate all of the limitations of independent claim 1. Thus, Applicants respectfully assert that claims 5-7 and 11-14 are allowable at least based on an allowable claim 1.

Additionally, amended claim 7 recites in part that “*an overlapping area between the printed coil and the air coil comprises a first triangle having a surface area equal to $0.5 \cdot L \cdot R \cdot \sin(\varphi)$, a circle segment having a surface area equal to $0.5 \cdot R^2 \cdot \alpha$, and a second triangle having a surface area equal to $0.5 \cdot D \cdot R \cdot \sin(\theta)$, wherein R represents a radius of the printed coil, D represents a coil diameter of the air coil, L represents a length of the air coil, φ represents an angle of the first triangle, α represents an angle of the circle segment, and θ represents an angle of the second triangle.*” Applicants respectfully assert that neither Knutson nor Takahira teaches the above-identified limitation of amended claim 7. Thus, Applicants respectfully assert that amended claim 7 is patentable over Knutson in view of Takahira.

Independent Claim 8

Claim 8 includes limitations similar to the limitations of claim 1. Because of the similarities between claim 8 and claim 1, Applicants respectfully assert that the remarks

provided above with regard to claim 1 apply also to claim 8. Accordingly, Applicants respectfully assert that claim 8 is patentable over Knutson in view of Takahira.

Dependent Claims 21-26

Claim 26 has been amended in a similar fashion to claim 7. Claims 21-26 depend from and incorporate all of the limitations of independent claim 8. Thus, Applicants respectfully assert that claims 21-26 are allowable at least based on an allowable claim 8.

Additionally, because of the similarities between amended claim 26 and amended claim 7, Applicants respectfully assert that the remarks provided above with regard to amended claim 7 apply also to amended claim 26. Accordingly, Applicants respectfully assert that amended claim 26 is patentable over Knutson in view of Takahira.

Independent Claim 9

Claim 9 includes limitations similar to the limitations of claim 1. Because of the similarities between claim 9 and claim 1, Applicants respectfully assert that the remarks provided above with regard to claim 1 apply also to claim 9. Accordingly, Applicants respectfully assert that claim 9 is patentable over Knutson in view of Takahira.

Dependent Claim 18

Claim 18 has been amended in a similar fashion to claim 7. Amended claim 18 depends from and incorporates all of the limitations of independent claim 9. Thus, Applicants respectfully assert that amended claim 18 is allowable at least based on an allowable claim 9.

Additionally, because of the similarities between amended claim 18 and amended claim 7, Applicants respectfully assert that the remarks provided above with regard to amended claim 7 apply also to amended claim 18. Accordingly, Applicants respectfully assert that amended claim 18 is patentable over Knutson in view of Takahira.

Independent Claim 10

Claim 10 includes limitations similar to the limitations of claim 1. Because of the similarities between claim 10 and claim 1, Applicants respectfully assert that the remarks

provided above with regard to claim 1 apply also to claim 10. Accordingly, Applicants respectfully assert that claim 10 is patentable over Knutson in view of Takahira.

Dependent Claim 20

Claim 20 has been amended in a similar fashion to claim 7. Amended claim 20 depends from and incorporates all of the limitations of independent claim 10. Thus, Applicants respectfully assert that amended claim 20 is allowable at least based on an allowable claim 10.

Additionally, because of the similarities between amended claim 20 and amended claim 7, Applicants respectfully assert that the remarks provided above with regard to amended claim 7 apply also to amended claim 20. Accordingly, Applicants respectfully assert that amended claim 20 is patentable over Knutson in view of Takahira.

CONCLUSION

Applicants respectfully request reconsideration of the claims in view of the claim amendments and the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted on behalf of:

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